In Claim 17, line 2, please replace "two" with -- three --.

In Claim 18, line 3, please replace "two" with -- three --.

In Claim 18, line 5, before "two", please replace "the" with -- any --.

19. (Amended) In a substrate processing apparatus comprising a frame with a plurality of side by side substrate storage areas, a robot transport arm pivotably mounted to the frame to transport substrates between the substrate storage areas and a substrate holding area, the robot transport arm having an end effector and a wrist, the end effector being pivotably mounted to the wrist of the robot transport arm, and a controller controllably connected to the robot transport arm wherein the improvement comprises:

the controller being programmed to control the robot transport arm [being adapted to] for substantially rectilinearly [move] moving substrates into and out of at least two of the plurality of side by side substrate storage areas along axes of translation corresponding to each of the two substrate storage areas, and for moving the end effector without substrates into and out of at least one of the two storage area along a different path than the axis of translation corresponding to the storage area,

wherein an axis about which the robot transport arm pivots relative to the frame stays in one location relative to the frame both when the robot transport arm moves substrates into and out of each of the two substrate storage areas, and when the end effector is moved without substrates into

the at least one of the two substrate storage areas, and

wherein the end effector is slaved to the robot transport arm to rotate automatically about the wrist when the robot transport arm moves substrates into and out of each of the substrate storage areas.

23. (Amended) A substrate transport apparatus comprising:

a robot transport arm with an end effector to hold a substrate thereon;

means for rotating the robot transport arm about a first axis of rotation, the means for rotating the robot transport arm comprising a first drive mechanism being drivingly connected to the robot transport arm to rotate the robot transport arm as a unit about the axis of rotation;

means for linearly displacing the end effector of the robot transport arm, the means for displacing the end effector comprising a second drive mechanism drivingly connected to the robot transport arm to substantially radially displace the end effector relative to the axis of rotation; and

a controller controlling the means for rotating the robot transport arm and the means for displacing the end effector to provide compound rotation of the robot transport arm about the axis of rotation with radial displacement of the end effector relative to the axis of rotation [to result] resulting in general rectilinear

translation of the substrate from an initial position to a final position along a first path through [into and out of] a transport opening in the substrate holding chamber;

wherein the controller controls the means for rotating and the means for displacing for returning the end effector from the final position along a second path through the opening in the substrate holding chamber, the second path being different than the first path.

Please add the following Claims:

-- 24. A method as in Claim 1, wherein the movement and rotation of the transport arm result in the substrate on the end effector being displaced from an initial position to a final position along a first path through a substrate transport passage of the substrate area, and wherein the end effector is returned to the initial position along a second path through the substrate transport passage, the second path being different than the first path.

25. A method as in Claim 24, wherein the end effector is returned to the initial position without the substrate.

26. A method as in Claim 1, wherein the substrate processing apparatus comprises at least three of the substrate holding areas located side by side to each other, the transport arm transporting substrates into and out of each of the three substrate holding areas, and wherein the axis of rotation at the shoulder of the transport arm stays in one location relative to the three substrate holding areas when the